

SYNTHETIC RUBBER

(Maximum Marks : 100)

(Time : 3 Hours)

PART – A

(Maximum Marks : 10)

- I. Answer the following questions in one or two sentences: Marks
1. Write down any four characteristics of synthetic rubber.
 2. What is rubber elasticity with reference to extensibility and glass transition temperature?
 3. What are the components of polyurethane rubber? Give one example each.
 4. What is carboxylated SBR?
 5. Distinguish blends and composites. (5 x 2 = 10)

PART – B

(Maximum Marks : 30)

- II. Answer any five full questions.
1.
 - a. Give the comparison between elastomers, plastics and fibres. (4)
 - b. What is T_g? (2)
 2.
 - a. Explain the monomer preparation of styrene and butadiene. (4)
 - b. Name the monomers and structures of Butyl Rubber. (2)
 3.
 - a. Explain the properties of silicone Rubber. (4)
 - b. Give two applications of silicone rubber. (2)
 4.
 - a. Write the preparation of linear polysulphide rubber. (4)
 - b. Mention the main properties of polysulphide rubber. (2)
 5.
 - a. Give the physical characteristics of Polyacrylic rubber. (2)
 - b. Explain the compounding ingredients of Polyacrylic rubber. (4)
 6.
 - a. Explain the main properties of Epichloro hydrin rubber. (4)
 - b. State the applications of Bromobutyl Rubber. (2)
 7.
 - a. State the properties of Inomers. (4)
 - b. Mention the advantages of blending. (2)
- (5 x 6 = 30)

PART – C

(Maximum Marks : 60)

(Answer one full question from each unit)

UNIT – I

- III.
 - a. Explain with a flow diagram the production of emulsion SBR. (8)
 - b. Explain the applications and processing of EPDM. (7)

OR

- IV.
 - a. Explain with a flow diagram the production of IIR. (8)
 - b. Explain the production, properties and application of Polybutadiene Rubber. (7)

UNIT – II

- V.
 - a. Explain the production, properties and application of Nitrile Rubber. (8)
 - b. Explain the curing system used for chloroprene Rubber. (7)

OR

- VI.
 - a. Explain the production and compounding of CSM Rubber. (8)
 - b. Explain available grades and their properties of CSM. (7)

UNIT – III

- VII.
 - a. Explain the production, properties and applications of Epichloro Hydrin Rubber. (8)
 - b. Explain the properties and applications of Chloro Butyl Rubber. (7)

OR

- VIII.
 - a. Explain the production, properties and applications of Fluoro Carbon Rubber. (8)
 - b. Explain the chemical composition and applications of Ethylene Acrylic Rubber. (7)

UNIT – IV

- IX.
 - a. Explain the production and properties of Thermoplastic Polyurethane Rubber. (8)
 - b. Mention the properties and applications of powdered Rubber. (7)

OR

- X.
 - a. Explain the blending and applications of NR – EVA blend. (8)
 - b. Explain the blending and properties of NBR – PVC blend. (7)